

Listing of Claims:

21. (Currently Amended) A method for detecting network elements relaying communications between a base station and a mobile station in a mobile communication network, said method comprising:

monitoring time delays associated with communications between base stations and mobile stations;

calculating a timing advance which corresponds to time delays associated with communications between the base stations and the mobile stations; and

determining whether a communication was relayed via at least one of the network elements by detecting an increased time delay as compared to a known time delay of mobile stations communicating directly with the base stations;

wherein a determination is made that the communication is relayed via at least one of the network elements if the timing advance has a value which is greater than a predetermined value.

22. (Currently Amended) A The method according to claim 21, further comprising:

identifying the communication relaying elements based on the ~~ground~~ of communication time delays.

23. (Canceled)

24. (Canceled)

25. (Currently Amended) A The method according to claim 21 24, wherein the ~~said~~ predetermined value is zero.

26. (Currently Amended) A The method according to claim 21, wherein the mobile communication network is a GSM network.

27. (Currently Amended) A The method according to claim 21, further comprising:
sending an event notice to a network management system, when a presence
of at least one of said elements is initially detected for the first time.

28. (Currently Amended) A The method according to claim 21, wherein the time delays are
monitored by a base transceiver station (BTS).

29. (Currently Amended) A The method according to claim 21, wherein the time delays are
monitored by a base station controller (BSC).

30. (Currently Amended) A The method according to claim 21, further comprising:
monitoring the communication relayed via at least one of said the network
elements to determine various parameters giving which provide information with
respect to network functionality about the functioning of the network and said the
network elements.

31. (Currently Amended) A The method according to claim 21, wherein at least one of said
network elements is a radio repeater.

32. (Currently Amended) A The method according to claim 21, wherein at least one of said
network elements is an optical tunnelling configuration.

33. (Currently Amended) A system for detecting network elements relaying
communications between a base transceiver station and a mobile station in a mobile communication
network, where time delays between base transceiver stations and mobile stations are monitored, the
system comprising:

means for monitoring communications between a base transceiver station
and a mobile station;
means for calculating a timing advance which corresponds to time delays
between the base transceiver stations and the mobile stations; and

means for detecting communications relayed via at least one of the elements by detecting an increased time delay as compared to known time delays of mobile stations communicating directly with the base transceiver station;

wherein a determination is made that a communication is relayed via at least one of the network elements if the timing advance has a value which is greater than a predetermined value.

34. (Canceled)

35. (Currently Amended) A The system according to claim 33, wherein the mobile communication network is a GSM network.

36. (Currently Amended) A The system according to claim 33, the system further comprising means for sending an event notice to a network management system when a presence of at least one of said network elements is initially detected for the first time.

37. (Currently Amended) A The system according to claim 33, the system further comprising means for carrying out measurements from the communication relayed via at least one of said elements.

38. (Currently Amended) A network element for cellular communication networks comprising:

a relay element detection device for identifying communication relaying elements by detecting communication time delays between base stations and mobile stations in the cellular communication network; and

means for calculating a timing advance which corresponds to time delays between the base stations and the mobile stations;

wherein a determination is made that a communication is relayed via is relayed via the communication relaying elements if the timing advance has a value which is greater than a predetermined value.

39. (Currently Amended) ~~A~~ The network element according to claim 38, wherein the network element is a base transceiver station (BTS).

40. (Currently Amended) ~~A~~ The network element according to claim 38, wherein the network element is a base station controller (BSC).

41. (Previously Presented) The method according to claim 21, wherein the step of determining whether a communication was relayed via at least one of the network elements is performed without requiring any additional monitoring equipment to be located in the network element performing the relaying and without requiring any additional signaling to be generated by the network element performing the relaying.